

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-20V	15mΩ@-10V	-11A
	20mΩ@-4.5V	

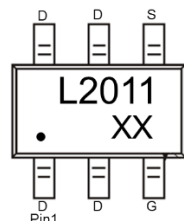
Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance

Application

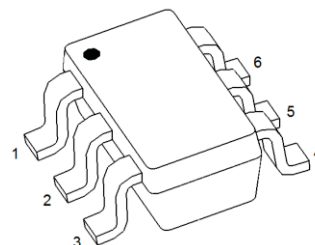
- Load Switch
- Battery Protection

MARKING:

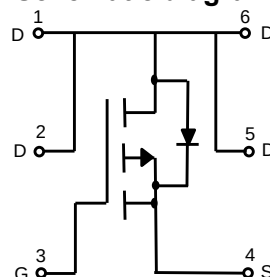


L2011 = Device Code
XX = Date Code
Solid Dot = Pin1 Indicator

SOT-23-6L



Schematic diagram



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V_{DS}	-20	V
Gate - Source Voltage	V_{GS}	± 12	V
Continuous Drain Current ^{1,5}	I_D	-11	A
Pulsed Drain Current ²	I_{DM}	-44	A
Power Dissipation ^{4,5}	P_D	1.5	W
Thermal Resistance from Junction to Ambient ⁵	$R_{\theta JA}$	83	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

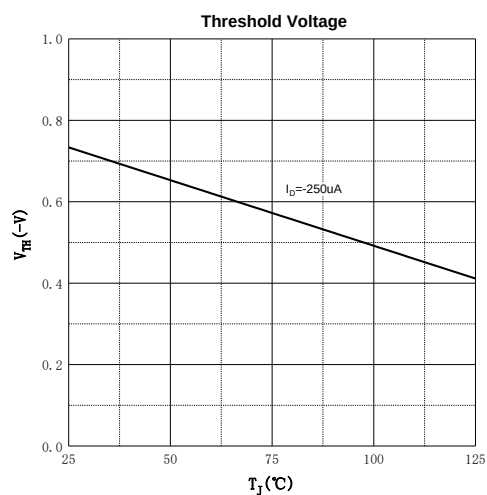
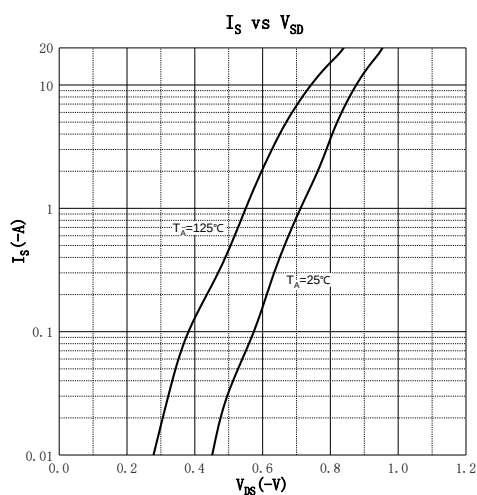
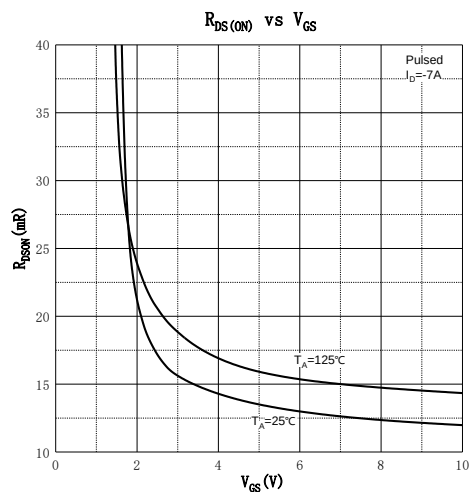
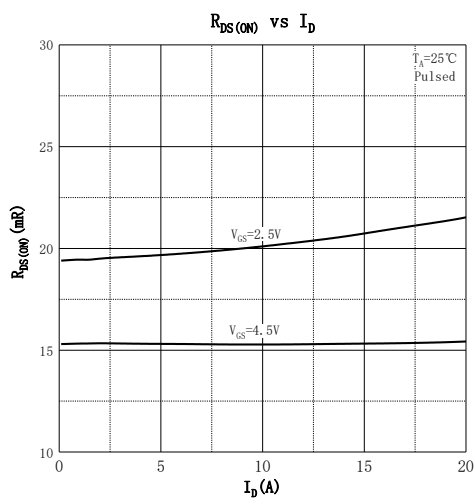
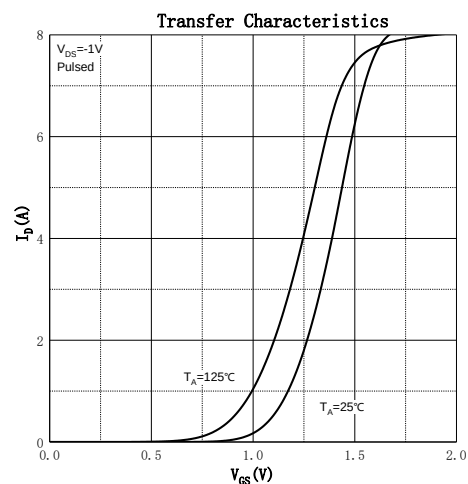
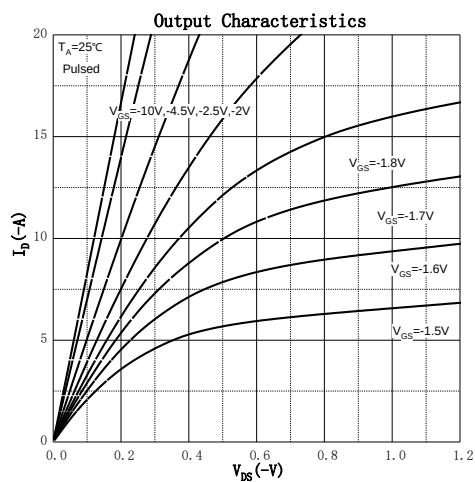
MOSFET ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

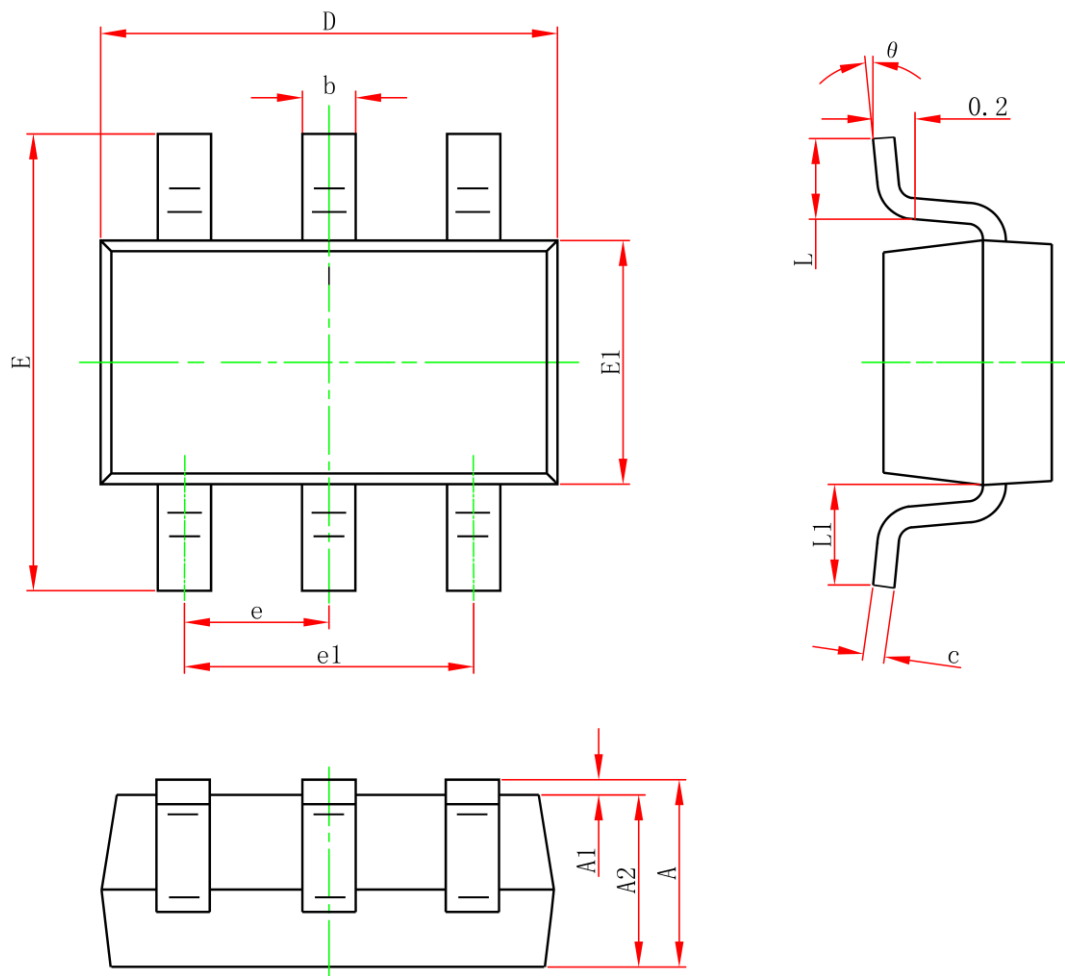
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -20V, V _{GS} = 0V			-1	μA
Gate - Body Leakage Current	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V			±100	nA
On Characteristics ³						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.4	-0.7	-1.0	V
Drain-source On-resistance	R _{DS(on)}	V _{GS} = -4.5V, I _D = -7.0A		15	24	mΩ
		V _{GS} = -2.5V, I _D = -6.0A		20	40	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = -10V, V _{GS} = 0V, f = 1MHz		2588		pF
Output Capacitance	C _{oss}			297		
Reverse Transfer Capacitance	C _{rss}			280		
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz		13		Ω
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = -10V, V _{GS} = -4.5V, I _D = -7A		26		nC
Gate-source Charge	Q _{gs}			3.5		
Gate-drain Charge	Q _{gd}			6.7		
Turn-on Delay Time	t _{d(on)}	V _{DD} = -10V, V _{GS} = -4.5V, R _L = 1.4Ω, R _G = 3Ω		10		ns
Turn-on Rise Time	t _r			30		
Turn-off Delay Ttime	t _{d(off)}			28		
Turn-off Fall Time	t _f			13		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V _{SD}	V _{GS} = 0V, I _S = -1.9A			-1.2	V

Notes :

- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 4.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.
- 5.Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics



SOT-23-6L Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0	0.150	0.000	0.006
A2	1.050	1.250	0.041	0.049
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	2.650	2.950	0.104	0.116
E1	1.500	1.700	0.059	0.067
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
L1	0.600REF		0.024REF	
θ	0°	8°	0°	8°